

FBI LABORATORY

5 1. **Field of the Invention**

10 **2. Description of the Related Art**

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the purchaser. Because dealers of signed collectibles are required by law to issue certificates of authenticity but are not required to obtain signature verification before the sale, the certificates of authenticity are often worthless.

Signature verification is available to financial institutions, but currently the signed collectible industry does not have similar verification methods available for its use. Also, current automatic signature verification is limited to two dimensional or flat items. No automatic signature verification provisions have been made for curved surfaces such as footballs, baseballs, or basketballs. Because there is not a convenient and automatic signature verification process for the collectible industry, this results in millions of dollar wasted annually on forged collectibles

The present invention is a verification system that allows a purchaser to scan the suspected signature into a personal computer, a portable computer, or a palm computer via either a desk top scanner, a hand held scanner, or a digital camera and to transmit the scanned suspected signature via the Internet to a central computer that is capable of comparing the suspected signature with authentic reference signatures and providing the purchaser with an immediate indication whether the suspected signature is authentic or not authentic. If the purchaser wants proof of verification, he may request a certificate of authenticity having a serialized hologram that is identical to a serialized hologram that is then permanently affixed to the collectible.

SUMMARY OF THE INVENTION

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The present invention is a verification system for authenticating a signature on a collectible quickly without having to transport the collectible. The suspected signature is scanned into an originating computer, i.e. either a personal computer, a portable computer, or a palm computer. A desk top scanner that is connected to the originating computer can be used for scanning flat collectibles such as photographs, or a hand held scanner that is connected to the originating computer can be used for scanning either flat objects or irregular shaped objects such as baseballs, footballs, basketballs, etc. Alternately, a digital camera may be used to scan the collectible with the image being entered into the originating computer from the camera. Then the suspected signature is electronically transmitted via the Internet to a central computer that is provided with software that compares the suspected signature with authentic reference signatures stored in the central computer. The central computer then immediately transmits to the originating computer an authentication of the signature or an indication that the suspected signature can not be authenticated.

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BRIEF DESCRIPTION OF THE DRAWINGS

FIGURES 1A, 1B, and 1C are a flow diagram of a method for online signature verification of collectibles according to a preferred embodiment of the
5 present invention.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The Invention

Referring now to the drawings and initially to Figure 1A, there is illustrated a method of on-line signature verification of collectibles. As shown in box 10, the collectible may be either a flat object, such as a photograph or painting, or an irregular shaped object, such as a baseball, basketball, or football. The collectible is inscribed with a signature of a celebrity, artist, athlete or other famous person. The signature to be subjected to authentication will hereafter be referred to as the suspected signature.

As shown in boxes 12 and 14, the suspected signature is scanned via a scanner 12 into an originating computer 14, i.e. a personal computer, a portable computer, or a palm computer. The scanner 12 that is used will be a desk top scanner that is connected to the originating computer 14 for scanning flat collectibles, a hand held scanner that is connected to the originating computer for scanning either flat objects or irregular shaped object, or a digital camera from which the image can be entered into the originating computer 14. If the user of this system is an individual, the originating computer 14 and scanner 12 may be the user's personal computer at home or at work. On the other hand, if the user of this system is an agent that has previously contracted to serve as the authorized agent for authenticating collectibles according to this process, the originating computer 14 and scanner 12 will be located in the agent's place of

business and the owner of the collectible 10 will bring the collectible to the agent's place of business for authentication.

Next, the user connects via the Internet to a central computer, as represented by the initial signature inquiry screen display of the central computer shown in box 16. The user fills out the requested customer information on the signature inquiry screen of box 16. Then, as shown in box 18, the user must select the type of object that bears the suspected signature that is to be authenticated and the person whose signature is to be authenticated. The computer has a number of reference signatures stored in memory for each signer, i.e. celebrity, artist, athlete, etc. By selecting the type of object that bears the suspected signature and the name of the signer whose signature is to be authenticated, the computer can match the set of reference signatures for the signer that most closely match the configuration of the object, i.e. flat, slightly curved, spherical, etc. This is important to match the configuration of the object to the appropriate set of reference signatures since a signature inscribed on a curved or spherical object will be slightly skewed and these skewed signatures must be compared with equally skewed reference signatures, i.e. reference signatures that are from similarly curved or spherical objects. As illustrated in box 19, the scanned image of the suspected signature is then transmitted from the originating computer 14 to the central computer 16.

As illustrated in box 20, the central computer 16 is provided with software that compares the suspected signature with the appropriate set of authentic

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signatures stored in the central computer for the designated individual, i.e. specified celebrity, artist or athlete for which a signature is to be verified. Referring now to Figure 1B, the details of box **20** are further illustrated, beginning with box **A** and ending with box **B**. Box **20A** shows that the software employed is

5 DataVision® software. This software is available from Datavision at the following address: 63 County Road, North Falmouth, MA 02556. This software can be loaded onto the central computer **16**, as illustrated in the drawings, or alternately can reside in an offsite computer that is accessible by the central computer **16** by the Internet or other appropriate real time connection. Although a particular

10 brand of software has been specified, the invention is not so limited. Any suitable software can be use that will accomplish the desired result. Box **20A** shows that the software creates a TIFF format of the suspected signature and digitizes the image. This results in what is referred to as a real time digital image. Box **20B** shows that the software captures the real time digital image and

15 compares the suspected signature sample to on-file single or multiple signature samples for the same signer. Box **20C** shows that the software determines the percentage of confidence based on pre-set confidence limits. For example, the pre-set confidence limit might be set at 95% which means that the suspected signature must match the reference signature or signatures at a confidence level

20 of 95% in order for the suspected signature to be authenticated by the system. As shown in box **20D**, the system calculates a score and alerts the user or

Although not illustrated, it may be desirable for security purposes to again require that the marked collectible 32 be scanned again after the second hologram has been affixed to the collectible as a means of verifying that the second hologram has been properly affixed to the collectible.

- 5 While the invention has been described with a certain degree of particularity, it is manifest that many changes may be made in the details of construction and the arrangement of components without departing from the spirit and scope of this disclosure. It is understood that the invention is not limited to the embodiments set forth herein for the purposes of exemplification,
- 10 but is to be limited only by the scope of the attached claim or claims, including the full range of equivalency to which each element thereof is entitled.

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